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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/536,898 03/28/00 SHIMIZU

H 10417-031001

EXAMINER

MMC2/0913

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LOUIE, W

ART UNIT

PAPER NUMBER

2814

DATE MAILED:

09/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/536,898

Applicant(s)

SHIMIZU ET AL.

Examiner

Wai-Sing Louie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 8, 9, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, line 2, it is unclear what is spacer is? For the purpose of examination, the lens 37 is assumed.

In claim 8, line 3, it is unclear what is meant by matrix form.

In claim 8, line 3, it is unclear what is meant by "at least end ones"? For the purpose of examination, "at least one end" is assumed.

In claim 8, line 4, it is unclear what is meant by "a predetermined angle with respect to a center one"? There are two units in the middle.

In claim 9, line 2, it is unclear how is the light reflected by the seal?

In claim 14, line 3, it is unclear what is a "solder resist"?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 (in so far as they are understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagane et al. (US 5,430,484) in view of Liu (US 5,886,401).

With regard to claim 1, Nagane et al. disclose an illuminating device (col. 1, line 43 to col. 13, line 4 and fig. 8) comprising:

- A substrate 106 in which at least a surface is provided with insulation (electrodes are mounted on the surface of the substrate 106, inherently, the substrate has to be insulated or made of insulating material);
- A first electrode 110 and a second electrode 111 formed on the surface (col. 1, lines 67-68);
- A light-emitting element (LED) 107 connected with the first and second electrode (fig. 8);
- A seal 50 which is disposed in a periphery of the substrate (col. 9, lines 34-35);
- Nagane et al. do not disclose a transparent substrate. However, Liu discloses a transparent substrate (Liu col. 1, line 56). Liu teaches the insulating substrate made of aluminum oxide, which is an excellent insulating material and it is transparent (Liu col. 1, lines 16-20). Therefore, it would have been obvious to one with ordinary skill in the art to have an aluminum oxide transparent substrate in Nagane's device in order to provide insulation to the electrodes.

With regard to claim 2, in addition to the limitation disclosed in claim 1, Nagane et al. also disclose:

- The first and second electrodes are made of gold or silver, but do not disclose that they are made of Cu covered with an oxidation resistant metal. One with ordinary

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skill in the art would use copper covered with an oxidation resistant material to replace the gold or silver electrodes to reduce the manufacturing cost. It is obvious to have electrodes made of copper covered with an oxidation resistant material in order to reduce the cost;

- The light emitting element is a chip fixed to the electrode (col. 1, line 60);
- Connecting means 108a for electrically connecting the electrode to the light-emitting element.

With regard to claim 3, in addition to the limitation disclosed in claims 1 and 2, Nagane et al. also disclose:

- The transparent substrate which is fixed via the seal, and the connecting means in order to enable the light-emitting element to emit light.

With regard to claims 4 and 13, Nagane et al. have been modified in claim 2 to have copper electrodes covered with an oxidation resistant material. One with ordinary skill in the art would know that the oxidation resistant material could be deteriorated with age. However, an inert gas atmosphere would prolong the life of the oxidation resistant material. Therefore, it would have been obvious to one with ordinary skill in the art to have inert gas filled into the sealed space (condenser lens) in order to prolong the life of the oxidation resistant material.

With regard to claims 5 and 6, Nagane et al. disclose the condenser lens 50 (spacer) is made of acrylic resin (col. 8, lines 63-64) and it is insulative. The light transmitting resin is formed into a lens-like shape (fig. 9).

With regard to claim 7, Nagane et al. disclose the condenser lens 50 abuts the substrate (fig. 9).

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With regard to claims 8 and 16, Nagane et al. disclose at least one end is inclined at a predetermined angle to the illuminating device (fig. 7).

With regard to claim 9, Nagane et al. disclose the condenser lens is for diffusing the light emitted by the LED (col. 9, lines 47-48). The acrylic resin could be formed into a glossy surface.

With regard to claims 10-13, Nagane et al. have been modified in claim 2 to have copper electrodes covered with an oxidation resistant material and have been modified in claim 4 to have inert gas filled into the seal space. Therefore it is obvious to have a filling hole and exhausting hole for the gas. The filling hole can be made of brazing material, which is merely a design choice.

With regard to claims 14 and 15, Nagane et al. disclose the substrate is made of glass (col. 7, lines 42-46). A glass substrate requires bonding material in order to secure the condenser lens to the glass substrate (col. 9, lines 30-33).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474.


The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

wsl

September 8, 2001



Olik Chaudhuri
Supervisory Patent Examiner
Technology Center 2800